Docket No.: 204552028900
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Kei YAMAMOTO et al.

Application No.: 10/608,776 Confirmation No.: 8129

Filed: June 30, 2003 Art Unit: 2828

For: SEMICONDUCTOR LASER DEVICE AND OPTICAL DISK UNIT USING THE SAME Examiner: Delma R. Flores Ruiz

APPEAL BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

As required under § 41.37(a), this brief is filed not more than two months after the Notice of Appeal filed in this case on May 5, 2008, and is in furtherance of said Notice of Appeal.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1206:

I. REAL PARTY IN INTEREST

The real party in interest for this appeal is:

SHARP KABUSHIKI KAISHA

II. RELATED APPEALS, INTERFERENCES, AND JUDICIAL PROCEEDINGS

There are no other appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

A. Total Number of Claims in Application

There are 22 claims pending in the application.

B. Current Status of Claims

1. Claims canceled: none
2. Claims withdrawn from consideration but not canceled: none
3. Claims pending: 1-22
4. Claims allowed: 9-22
5. Claims rejected: 1-8

C. Claims On Appeal

The claims on appeal are claims 1-8.

IV. STATUS OF AMENDMENTS

Applicant did not file an Amendment After Final Rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Claim 1 recites a semiconductor laser device having an oscillation wavelength of larger than 760 nm and smaller than 800 nm (see para. [0028]) in which at least a lower clad layer (layer 23, Fig. 1 and para. [0083], a lower guide layer (layer 24, Fig. 1 and para. [0083]), an active region (region 25, Fig. 1 and para. [0083]), an upper guide layer (layer 28, Fig. 1 and para. [0083]) and an upper clad layer (layer 29a, Fig. 1 and para. [0083]) are supported by a GaAs substrate, the active region (region 25, Fig. 1) having a quantum well structure in which one or more well layers (layers 27a and 27b in Fig. 1) and barrier layers (layers 26a, 26b and 26c in Fig. 1) are stacked (para. [0083]), wherein said one or more well layers are formed of InGaAsP (para. [0084]) and said barrier layers are formed of one of InGaAsP and GaAsP (para. [0011]), and said upper and/or lower guide layer is formed of $Al_zGa_{1-z}As$ ($0.20<z\leq1$) (see para. [0083], upper and lower guide layers can be composed of $Al_{0.35}Ga_{0.65}As$).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-8 stand finally rejected under 35 USC 103(a) as being unpatentable over Ohkubo, U.S. Patent No. 5,832,018, in view of Serreze, U.S. Patent No. 5,222,090.

VII. ARGUMENT

A. The rejection of claims 1-8 under 35 USC 103(a) as being unpatentable over Ohkumo in view of Serreze should be reversed.

The Examiner asserts that Ohkubo discloses all of the features of claim 1 except for the features of "said one or more well layers are formed of InGaAsP" and "a semiconductor laser device having an oscillation wavelength of larger than 760 nm and smaller than 800 nm." The Examiner asserts that Serreze teaches a device with one or more well layers formed of InGaAsP and a semiconductor laser device having an oscillation wavelength of larger than 760 nm and smaller than 800 nm. The Examiner also asserts that it is well known in the art for one or more well layers to be formed of any one of InGaP, InGaAsP or GaAsP and for high powered semiconductor devices to have an oscillation wavelength larger than 760 nm and smaller than 800 nm.

Appellants respectfully submit the following explanation for the purposes of explaining the background of the technology of the appealed claims. It is known to those of ordinary skill in the art that the structure of barrier/guide/cladding layers is an important factor in obtaining a desired emission wavelength. To obtain the claimed wavelength range of between 760 nm and 800 nm, the well layer of the device must be made of InGaAsP, not InGaAs (which is what is used in Ohkubo's device) ***and*** that InGaAsP or GaAsP barrier layers ***and*** an upper and/or lower $Al_zGa_{1-z}As$ ($0.20<z\leq1$) guide layer be used in conjunction with the InGaAsP well layer. Thus, it is the exact combination of the claim elements of claim 1 which achieve this desired wavelength.

Turning to the art cited by the Examiner, Ohkubo discloses a 7 nm-thick InGaAs well layer 16 (col. 3, lines 37-38). Although Ohkubo is silent with regard to this layer's wavelength, this well layer is typically used in 980 nm laser devices. As noted above, the combination of the 7 nm-thick InGaAs well layer with Serreze's barrier layers of InGaAsP, InGaP, or GaAsP ***cannot*** realize a 760-800 nm laser device. Although the Examiner reminds appellants that Serreze discloses a device which can operate in a band of wavelengths between 700 and 850 nm, it is the exact structure disclosed by Serreze which realizes this feature. If any of the layers of this structure are changed, the device will not still operate between 700 and 850 nm. The only way to know that the exact combination of features from these two references would result in the claimed invention, would be through the use of impermissible hindsight. Picking and choosing different elements from two different references in an effort to recreate the claimed invention is impermissible.

Finally, although the Examiner has accused appellants of attacking the references individually in the final Office Action mailed February 6, 2008, as clearly evidenced above, appellants have submitted that the combination of Ohkubo and Serreze fails to teach or suggest the features of claim 1 because if Ohkubo is modified as suggested by the Examiner in view of Serreze, the device would fail to produce a laser device with an emission wavelength of between 760 and 800 nm. Further, the Examiner is impermissibly picking and choosing elements from various references in an effort to recreate the claimed invention in hindsight. For at least these reasons, this rejection should be reversed.

VIII. CLAIMS

A copy of the claims involved in the present appeal is attached hereto as Appendix A. As indicated above, the claims in Appendix A do include the amendments filed by Applicant on November 21, 2007.

IX. EVIDENCE

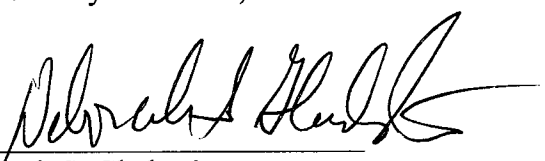
No evidence pursuant to §§ 1.130, 1.131, or 1.132 or entered by or relied upon by the examiner is being submitted.

X. RELATED PROCEEDINGS

No related proceedings are referenced in II. above, or copies of decisions in related proceedings are not provided, hence no Appendix is included.

Dated: July 3, 2008

Respectfully submitted,

By 

Deborah S. Gladstein
Registration No.: 43,636
MORRISON & FOERSTER LLP
1650 Tysons Blvd, Suite 400
McLean, Virginia 22102
(703) 760-7753

APPENDIX A

Claims Involved in the Appeal of Application Serial No. 10/608,776

1. A semiconductor laser device having an oscillation wavelength of larger than 760 nm and smaller than 800 nm in which at least a lower clad layer, a lower guide layer, an active region, an upper guide layer and an upper clad layer are supported by a GaAs substrate, the active region having a quantum well structure in which one or more well layers and barrier layers are stacked, wherein

said one or more well layers are formed of InGaAsP and said barrier layers are formed of one of InGaAsP and GaAsP, and

said upper and/or lower guide layer is formed of $Al_zGa_{1-z}As$ ($0.20<z\leq1$).

2. The semiconductor laser device according to Claim 1, wherein

a value of z representing a mole fraction of Al in the group-III elements of said upper and/or lower guide layer is larger than 0.25.

3. The semiconductor laser device according to Claim 1, wherein

said upper and lower clad layers contain Al, and

a value of z, where a value of z represents a mole fraction of Al in the group-III elements of said upper and/or lower guide layer, is smaller than a value of an Al mole fraction of said upper and lower clad layers.

4. The semiconductor laser device according to Claim 3, wherein

the value of z varies stepwise or continuously and in such a fashion as to increase with increasing nearness to said upper and lower clad layers.

5. The semiconductor laser device according to Claim 1, wherein

a value of z, where a value of z represents a mole fraction of Al in the group-III elements of said upper and/or lower guide layer, of at least a portion in contact with a barrier layer of said upper and/or lower guide layer is smaller than 0.4.

6. The semiconductor laser device according to Claim 1, wherein said one or more well layers have a compressive strain.

7. The semiconductor laser device according to Claim 1, wherein said barrier layers have a tensile strain.

8. An optical disk unit in which the semiconductor laser device as defined in Claim 1 is used as a light-emitting device.